

CASE STUDY



DNM

Egypt



Why Marzoli?

Outstanding quality.
Superior efficiency.

DNM is a vertically integrated production plant of high quality denim fabric. The plant is located in the Public Free Zone of the city of Damietta, Egypt, covering an area of 150,000 m². In 2011 the company became part of the Eroglu Holding that is active internationally in different sectors in which it competes by closely monitoring the technological advancements and by committing highly trained and skilled workers.

Today DNM, as an integrated reality in the production of the denim fabric, carries out all the activities comprising the production process: from the cotton field to the yarn, from the yarn to the fabric. The company produces 40 tons of yarn per day with an annual production capacity of 30 million meters of denim fabric.

As part of the Eroglu Holding, DNM shares the same values of outstanding quality and leading-edge efficiency which have enabled the

company to thrive ever since its incorporation. *"Competition has become increasingly fiercer in the production of the denim fabric. If, on one hand, the price competition undertaken by several competitors has lowered the average selling price, shrinking the contribution margins of the manufacturers of this industry, on the other hand an increasing number of clients ask for high quality products. Quality, in fact, does not only entail better tactile and visual characteristics of the end-product, but it also entails higher efficiency in downstream processes. This is the reason why in DNM, in compliance with the values of the Eroglu Group, we continuously strive for quality excellence in every activity we undertake"*

Mr Tuncay Kutlu, DNM's Spinning Manager, states.

The fundamental importance that quality vests in DNM's strategy has led the company to rely on Marzoli's leading-edge technology. In 2011, DNM installed a full spinning line

of 36,000 spindles that today ensures a daily production of forty tons of top quality yarn.

Another key feature that has fostered DNM to rely on Marzoli as the unique supplier of its technical asset is the outstanding efficiency levels of Marzoli machines. Marzoli has always dedicated great effort to the reduction of energy absorptions and cotton waste and its machines represent technological excellence towards these objectives.

"One of the reasons why we decided to employ Marzoli's technology is that it ensures minimum electricity consumption and waste percentages. This has a positive impact on the costs side as it allows to obtain significant savings on two of the main cost centers inside a spinning mill: power and raw material. This allows to lower the production cost of the yarn and hence contributes to the achievement of a competitive advantage" Mr Tuncay Kutlu states.



Mr Tuncay Kutlu
DNM's Spinning Manager



Our Solution

Leading-edge technology and excellent service

- OUTSTANDING QUALITY
- LEADING IPI VALUES
- MINIMUM Kw-OVER-Kg-OF-YARN
- SKILLFULL AND COMPETENT INSTALLATION
- REGULAR VISITS OF SENIOR PRODUCT MANAGERS

In 2011 Marzoli installed a complete spinning line at DNM plant. The project included three complete blow room lines, thirty eight C601 cards, twenty four UMTN draw frames, twelve of which equipped with autolevelling technology, twelve FT2DN roving frames with automatic doffing and thirty MPTN ring spinning frames with 1,200 spindles each. Thanks to the installation of these machines the spinning mill located in Damietta produces almost 40 tons of Ne10, Ne12 top quality slub yarn at outstanding efficiency levels.

“Moved by our strategy of outstanding quality and superior efficiency in production operations we chose to rely on Marzoli as a strategic partner.

This choice has never betrayed expectations. Since the installation the machines have constantly produced high quantities of yarn of perfect quality, with leading IPI values and minimum Kw-over-Kg-of yarn” DNM’s Spinning Chief, asserts. Beside the technological excellence of its machines, Marzoli has been highly appreciated for the great level of service. Marzoli assists all its clients from the first commercial discussions, through the installation and start up of the spinning mill, to the after-sales service.

“During the construction of our spinning mill, we have been assisted by Marzoli’s technicians who have skillfully and competently carried out installation and setting of the machines and have provided our employees with training for the best management and maintenance of the equipment. We are also very satisfied with the after-sales service. Marzoli’s product managers regularly visit us in order to check if the machines are always operating

at their best. During these visits we also have the opportunity to have interesting discussions with highly prepared people on the most recent trends of technology and of the market”

DNM Spinning Chief states. In order to further boost its assistance service Marzoli has also developed a Remote Maintenance platform, the MRM. Thanks to the installation of special sensors in critical parts of the machines, this platform allows to carefully monitor in real time, while the machines are working, their state of health. If there are any parameters (e.g. temperatures, vibrations, etc.) that exceed the standard operating conditions, the platform immediately alerts the client’s maintenance team.

“Overall we are very satisfied of Marzoli. The company has proved to be a competent and reliable partner and has actively contributed to the successful implementation of our strategy based on quality and efficiency” DNM Spinning Chief concludes.



Mr Ahmet Polatli
DNM’s Spinning Chief



Progressive opening
and cleaning:
gentle treatment of the
fibers and excellent
quality results



Blow room

- EFFECTIVE OPENING
- PERFECT CLEANING
- EFFICIENT BLENDING
- REDUCED NEPS FORMATION
- GENTLE AND INTENSIVE TREATMENT OF THE FIBERS

The quality of the final yarn greatly depends on how opening and cleaning operations on the cotton are carried out. Marzoli's blow room line has always been a benchmark in the sector for the outstanding quality results that it allows to obtain. DNM has therefore decided to install three Marzoli opening lines for its production in order to ensure: effective opening, perfect cleaning and efficient blending of the raw material.

The three B12 Superblenders allow a smooth and continuous plucking of the material all the way down to the floor. Thanks to the two beaters each B12 Superblender allows to turn the bales into very small flocks that can then be efficiently processed by Marzoli B39 Duocleaner. The B39 Duocleaner is a very efficient opener designed to effectively clean the fiber flocks coming from the B12 superblender. The fibers rotate around the two beaters for six times and are softly but thoroughly opened and cleaned, before being sent to the three B143 automixers with 6 cells.

This reliable machine carries the fibers through a smooth air stream that simultaneously feeds the six vertical filling chutes. The material, after being pneumatically

compacted, is delivered to opening rolls. The blended fiber flocks are then sucked by the air stream of the cage condenser that is installed on the top of the three B38N fine openers. The B38N are followed by three B37N fine openers for an intensive and progressive opening and cleaning action which entails outstanding quality results, minimum neps formation and waste of good fibers. The two dust separators, the B44N installed on the top of the B38N and B37N, efficiently dedust the fibers. The combination of a beater with a big diameter (B38N) and three beaters with smaller diameters (B37N) guarantee the proper elimination of the trash contained inside the raw material.

The three B151N motor fans allow a homogeneous feeding of the thirty eight cards installed inside the spinning mill.

"Marzoli blow room line guarantees excellent quality performances thanks to its innovative design concept. It guarantees an intensive treatment of all the fibers thanks to a progressive opening and cleaning action which is gentle on the fibers but also very effective. This allows to obtain perfectly clean batts at the cards with the lowest amount of neps and loss of good fibers"

DNM Spinning Chief states.

Marzoli C601 Card

- OUTSTANDING QUALITY
- PERFECT PARALLELIZATION OF THE FIBERS
- EFFECTIVE SELECTION OF THE FIBERS
- HIGH PRODUCTION

DNM has installed thirty eight Marzoli C601 cards that currently produce almost two tons of excellent quality Ne 0.10 sliver every hour. Marzoli C601 card has a design that ensures great performances in productivity and quality standards. The pre-carding area is equipped with six carding sectors and two cleaning knives to grant the best feeding of the fibers to the mobile flats. In the carding area with

mobile flats thirty two of the ninety moving flats are always in their working position. Furthermore, at each passage, the moving flats are cleaned through an automatic flat cleaning device. This guarantees the highest carding performances with the perfect parallelization and effective selection of the fibers. The post-carding area is equipped with three carding sectors and one cleaning knife to grant the best preparation of the fibers for their transfer to the doffer.

Thanks to Marzoli C601 card, DNM can also achieve an excellent evenness of the card sliver. All the thirty eight cards

are equipped with a medium-short term autoleveller that senses the thickness of the batt and adjusts the speed of the feeding roll in order to vary the draft. The outcome is a substantial improvement in the evenness of the sliver. *"We are very satisfied with Marzoli's cards. They are a very reliable product that requires minimum maintenance and that maintains its outstanding quality performances after years since its installment. Thanks to Marzoli's cards we have been able to achieve the top percentiles of Uster Statistics for carded yarn"* DNM Spinning Chief states.



UMTNS & UMTRNS draw frames

- HIGH PRODUCTION
- EXCELLENT SLIVER UNIFORMITY
- GREAT RELIABILITY

The draw frame is one of the most critical machines in a spinning mill: it plays a fundamental role in the achievement of superior quality results in the end product and it must also run at high production speed in order to ensure a fast return on the investment. As all Marzoli's draw frames, also the twelve UMTNS and the twelve UMTRNS (with autoleveller) installed at DNM have been designed towards

these objectives. These high performance draw frames can reach a speed of 1,000 m/min with lower CV%. High productivity, outstanding quality, absolute reliability, reduced sliver breakages during operation, easiness of use, flexibility and low operational costs are the main features of these fully electronic models. All the technological parameters are set directly on the touch screen and all the programs can be stored and recalled at any time in order to save time during lot changes.

The sliver autoleveller works as an "open loop" control system

(short term). The Tongue and Groove measuring unit precisely scans the mass of the feeding slivers and, thanks to the onboard digital processor, guarantees a reaction time of the drafting cylinders of 3 ms. This ensures an immediate correction of the draft for perfectly uniform and even slivers, even when working at high production speed.



FT2DN Roving frames



- GREAT ENERGY EFFICIENCY
- TOP QUALITY OF THE ROVING
- EXCELLENT COORDINATION OF ALL WORKING ORGANS
- MACHINE SIMPLIFICATION
- PERFECT BOBBIN FORMATION

Currently there are twelve FT2DN roving frames with 144 spindles running at DNM spinning mill.

This machine belongs to the modern generation of roving frames which embodies advanced electronics for the control of all the independent drives of the working organs.

The central computer of the FT2DN guarantees the perfect coordination of the drafting cylinders, the flyers, the spindles and the bobbins rail. The machine can be managed in a simple and immediate way: all technological parameters (twist, roving tension, bobbin build up, rail movement and flyer speed) can be set directly on the touch screen and all production programs can be saved and recalled at any time in order to reduce downtime during lot changes.

Furthermore, the integration of electronics on the machine allows to boost energy efficiency, thanks to the reduction of mechanical friction, to increase the quality of the roving, thanks to lower vibrations, and a perfect bobbin formation thanks to the precise synchronization of all working organs.

MPTN Spinning frame



- HIGH SPEED
- LOW ENERGY CONSUMPTION
- OUTSTANDING FLEXIBILITY

DNM's spinning mill is equipped with thirty MPTN spinning frames with 1,200 spindles. This machine has independent drives for the spindles (tangential double belt drive), ring rail and drafting system; all of them are perfectly coordinated through advanced electronics which ensures high speed, low energy consumption and perfect bobbin building. Main draft, twist value, bobbin formation are set on the touch screen. The MPTN spinning frame sets the lead in productivity levels also thanks to:

- The lower number of doffing cycles enabled by the high cops capacity reached through the 75mm gauge and the 54mm ring.

- An efficient, fast and reliable automatic doffing.
- Minimum number of ends down enabled by the short dangling end of the spindles and the initial tightening of yarn ends.

The MPTN spinning frame also scores very well on flexibility: the versatile feeding creel allows to set the machine for the production of core-spun yarn with any type of core filament (elastic, rigid or semi-rigid) and with any type of covering fiber (natural, artificial or synthetic) and for the production of double-roving yarn; the advanced integrated slubbing technology, Marzoli Fancy Yarn Device, allows the spinner to upgrade at any time his production to slub yarn. All the thirty MPTN spinning frames installed at DNM are equipped with Marzoli Fancy Yarn Device and ten of them also with Lycra

technology for the production of high quality elastic yarn. Marzoli was the first textile machinery manufacturer to introduce a fully integrated slubbing device on its spinning frame. Since then it has developed this technology that requires no modification on the spinning frame and that, thanks to the light but solid mechanics of Marzoli's spinning frames, allows to reach unmatched performances for fancy yarn production. *"As the contribution margins on standard yarns shrink, spinners must upgrade their production by following the fashion trends. This requires a great deal of flexibility in the spinning technology and especially on the spinning frame. Thanks to Marzoli we can draw on an excellent technical asset that allows to reach high production of high quality yarn and to flexibly adapt to any market request"* DNM Spinning Chief states.



Outstanding yarn quality

High quality yarn allows to produce high quality fabrics and end products, to boost the brand image, avoid price competition and obtain higher efficiency in downstream operations.

In fact, during the warping and weaving processes, a high quality yarn entails fewer breakages and consequently fewer downtimes and defects on the fabric.

Moving from this consideration, DNM has implemented a business strategy that focuses on yarn quality as a strategic competitive factor.

"Every investment decision that we make carefully considers the possible impact on the product quality. This is why when it came to choose the supplier of our spinning technology we decided to rely on Marzoli, a standout name in the textile machinery industry" Mr Tuncay Kutlu asserts.

DNM dedicates a competent quality team, that works inside a fully-computerized laboratory, to continuously and carefully monitor yarn quality so that in case the target quality standards were not achieved, the maintenance team could immediately intervene on the production process.

"The high quality standards and the strict policy that we implement are meant to preserve and further enhance the brand image of DNM worldwide and to constantly ensure customer delight. Today we are capable of scoring among the highest percentiles of Uster Statistics and Marzoli's technology has actively contributed to the achievement of these results and to the success of the DNM denim fabric worldwide"

Mr Tuncay Kutlu concludes.



MARZOLI
INTERNATIONAL, INC.
USA

MARZOLI MACHINES
TEXTILE SRL
Italy

MARZOLI INDIA
MTMM PVT. LTD.
India

- Legend**
- Marzoli premises
 - Sales & service network
 - Sales affiliates

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